

REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the following discussion is respectfully requested.

Claims 1-18 remain active in this case.

In the outstanding Office Action, Claims 1-18 were rejected under 35 U.S.C. §103(a) as being unpatentable over US 6,529,899 (hereinafter Kraft) in view of importing the Semantic Web in UDDI (hereinafter Payne) (art of record) and in further view of 5,862,325 (hereinafter Reed).

Applicants respectfully traverse the outstanding grounds for rejection, because in Applicants' view the pending claims patentably define over the cited prior art.

More particularly, Claim 1 recites:

1. A Web service coordination plan creating apparatus, comprising:
a first storage section which stores user data that makes predicates indicating a states of a user;
a second storage section which stores a database that associates preconditions representing, in predicate form, necessary conditions for users to use Web services via an information communication network, with post conditions representing, in predicate form, the effects of invocation of the corresponding Web services; and
coordination plan creating means for, when receiving a user's request including search conditions for the Web services, acquiring matching user data in predicate form corresponding to the user's request from the first storage section, acquiring from the second storage a combination of Web services which satisfies the user's request by logically combining the preconditions and post conditions for a plurality of Web services including a Web service having the preconditions matching with the user data and a Web service having the post conditions matching with the user data, and creating a Web service linking plan where the individual Web services included in the combination are arranged in the order of the logical combination.

Thus, as is evident from Claim 1, in the claimed invention, the contents (meanings) of each Web service are indicated by representing both a necessary condition (precondition) to receive the Web service and a post condition which is the result of receipt of the service in

predicate form. Also, the claimed invention indicates a present status and a target status of each user by representing both the user's state and request in predicate form. Accordingly, the claimed invention executes a matching process by using predicate form expressions.

In addition, the present invention determines the order of performing a Web service (i.e., a plan of Web service) which meets the user's request, based on the states of users by matching (i) the states of users with a precondition of a Web service, (ii) a post condition of a Web service with a post condition of another Web service, and (iii) a post condition of a Web service with a user's request.

On the other hand, Kraft enables semi-automation of post processing relative to data found by searching a keyword from a database. That is, Kraft presents tools which can process the found data type (e.g., Java, DTD, etc.). Kraft merely relates the type of data with tools, and does not interpret the contents of data or tools. Kraft does not deal with a post condition after a selected tool is executed, and thus, does not teach a plan in which a plurality of tools is executed sequentially. In addition, a user's request provided as an initial input in Kraft is merely a keyword, and the result of calculation based on the keyword differs from the target status of the claimed invention. Thus, it is respectfully submitted that the claimed invention clearly patentably defines over Kraft.

Reed discloses a system to execute a prepared coordination plan effectively, and differs in the technical idea from the present invention which relates to a method of plan creation. In particular, communication objects of Reed include data and a processing order. In Reed, a consumer computer which receives the communication objects executes processing relating to itself in order. The communication objects execute necessary processing on the consumer computer by themselves. Thus, it is respectfully submitted that

Reed clearly differs from the claimed invention in the processing order, and does not obviate the claimed invention whether considered alone or in combination with Kraft.

UDDI is a service search engine which is publicly available and pre-registered. UDDI merely provides a service of searching by keywords. DAML-S is a language to describe ontologies which systematize the vocabulary expressing a service. By using DAML-S, it is possible to describe a precondition and a post condition as meanings of input/output data of a service.

Payne describes a system of dealing with the meaning of service by UDDI. In Payne, when a meaning condition of input/output of a service is provided as a search condition, a service having a precondition/post condition which matches the condition is found. However, Payne merely finds only one service, and does not show a method of plan creation from a plurality of services.

Therefore, it is respectfully submitted that the claimed Web service coordination plan creating apparatus of Claim 1 is in no way obviated by the teachings of Kraft, Reed and Payne absent hindsight.

Claim 7 recites similar features as stated in Claim 1, but in method format, as follows:

7. A Web service coordination plan creating method which uses user data that makes predicates indicating the states of users and a database that associates preconditions representing, in predicate form, necessary conditions for users to use Web services via an information communication network, with post conditions representing, in predicate form, the result of receiving the Web services to correspond to the Web services, the Web service linking plan method comprising:

a first step of, when receiving a user's request including search conditions for the Web services, acquiring matching user data in predicate form corresponding to the user's request from a first storage section;

a second step of acquiring from the second storage a combination of Web services which satisfies the user's request by logically combining the preconditions and post conditions for a plurality of Web services including a Web service having the preconditions matching with the user data and a Web service having the post conditions matching with the user data; and

a third step of creating a Web service linking plan where the individual Web services included in the combination acquired in the second step are arranged in the order of the logical combination.

For the same reasons as above noted with respect to Claim 1, Claim 7 is similarly believed to be patentably distinguishing over the cited prior art.

Claim 13 defines the subject invention in terms of a recording medium, as follows:

13. A recording medium which records a program for causing a computer to carry out a Web service coordination plan creating method which uses user data that makes predicates indicating the states of users and a database that associates preconditions representing, in predicate form, necessary conditions for users to use Web services via an information communication network, with post conditions representing, in predicate form, the result of receiving the Web services to correspond to the Web services, the program comprising:

a first instruction which causes the computer to execute a first step of, when receiving a user's request including search conditions for the Web services, acquiring matching user data in predicate form corresponding to the user's request from a first storage section;

a second instruction which causes the computer to execute a second step of acquiring from the second storage a combination of Web services which satisfies the user's request by logically combining the preconditions and post conditions for a plurality of Web services including a Web service having the preconditions matching with the user data and a Web service having the post conditions matching with the user data; and

a third instruction which causes the computer to execute a third step of creating a Web service linking plan where the individual Web services included in the combination acquired in the second step are arranged in the order of the logical combination.

For the same reasons as above noted with respect to Claim 1, Claim 13 is similarly believed to be patentably distinguishing over the cited prior art.

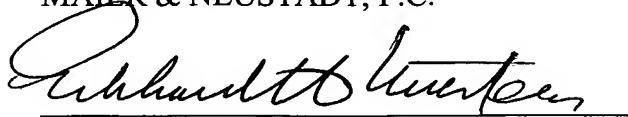
Accordingly, in view of the above comments, it is respectfully submitted that the outstanding grounds for rejection have been traversed and that Claims 1, 7 and 13, as well as the dependent claims dependent therefrom patentably define over the cited prior art. No further issues are therefore believed to be outstanding, and the present application is believed

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to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read 'Eckhard H. Kuesters', written over a horizontal line.

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